What we claim is:

1. A substantially manganese-free aluminum alloy rolled product consisting essentially of (in percent by weight): Cu 3.6 - 4.5%, Mg 1.0 - 1.6%, Zr 0.08 - 0.20%, Sc up to 0.06%, Fe up to 0.08%, Si up to 0.09%, Mn less than 0.05%,remainder aluminum and incident impurities.

2. An aluminum alloy rolled product according to claim 1, wherein Sc is present in an amount from 0.02 – 0.05%.

3. An aluminum alloy rolled product according to claim 1, wherein Zr is present in an amount from 0.08 – 0.14%.

4. An aluminum alloy rolled product according to claim 1, wherein Cu is present in an amount from 0.10 – 0.14%.

5. An aluminum alloy rolled product according to claim 1, having a recrystallized volume fraction of 5% maximum.

6. An aluminum alloy rolled product according to claim 1, wherein Mn is present in an amount of < 0.01%.

7. An aluminum alloy rolled product according to claim 1, having one or more of the following combinations of properties :

   a. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 400 MPa, and an apparent fracture toughness $K_{app(T\text{-}L)}$ of more than 110 MPa$\sqrt{}$m, measured according to ASTM E 561 in the T-L orientation on a specimen with a width of W=127 mm;

   b. an ultimate tensile strength in the longitudinal direction ($UTS_{(L)}$) of more than 450 MPa, and an elongation at fracture in the longitudinal direction of more than 24 %;

c. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 400 MPa, and a Kahn stress R_e of at least 180 MPa.

8. An aluminum alloy rolled product according to claim 1 comprising a sheet having on or more of the following combinations of properties :

a. a $UTS_{(L)}$ of more than 500 MPa, preferably more than 520 Mpa, and even more preferably more than 530 Mpa, and a $K_{app(T-L)}$ of more than 75 Mpa$\sqrt{m}$, measured according to ASTM E 647 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

b. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 450 Mpa, and preferably more than 460 Mpa, and a $K_{app(L-T)}$ of more than 77 Mpa$\sqrt{m}$, measured according to ASTM E 561 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

c. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 350 MPa, preferably more than 400 MPa and even more preferably more than 450 MPa, and a Kahn stress R_e of at least 190 MPa.

9. An aluminum alloy rolled product according to claim 1, comprising a sheet or thin plate with a thickness below about 12 mm in T351 temper, having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 1.3 10^{-4} mm/cycles at $\Delta K = 10$ MPa$\sqrt{m}$,
- da/dn less than 4.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa$\sqrt{m}$,
- da/dn less than 8.0 10^{-4} mm/cycles at $\Delta K = 20$ MPa$\sqrt{m}$,
- da/dn less than 16 10^{-4} mm/cycles at $\Delta K = 25$ MPa$\sqrt{m}$,
- da/dn less than 25 10^{-4} mm/cycles at $\Delta K = 30$ MPa$\sqrt{m}$.

10. An aluminum alloy rolled product according to claim 1 comprising a plate in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 3.0 10^{-5} mm/cycles at $\Delta K = 10$ MPa$\sqrt{m}$,
- da/dn less than 1.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa$\sqrt{m}$,
- da/dn less than 1.0 10^{-3} mm/cycles at $\Delta K = 25$ MPa$\sqrt{m}$,
- da/dn less than 3 10^{-3} mm/cycles at $\Delta K = 30$ MPa$\sqrt{m}$.

11. An aluminum alloy rolled product according to claim 1, exhibiting in a corrosion test according to ASTM G 110, a maximum intergranular attack of less than 80 µm in T39 temper, and/or less than 200 µm in T851 temper, and/or less than 250 µm in T89 temper, and/or less than 300 µm in T351 temper.

12. An aluminum alloy rolled product according to claim 1, exhibiting in a corrosion test according to ASTM G 110 a maximum intergranular attack of less than 70 µm in T39 temper, and/or less than 180 µm in T851 temper, and/or less than 220 µm in T89 temper, and/or less than 270 µm in T351 temper.

13. A lower wing skin structural member made in an aluminum alloy rolled plate product according to claim 1.

14. A fuselage skin member made in an aluminum alloy rolled plate or sheet product according to claim 1.

15. A method for obtaining an aluminum alloy rolled product according to claim 1, wherein said rolled product comprises a plate, said method comprising:

(a) Casting a rolling ingot, followed by optional stress relieving ,and scalping,

(b) Homogenizing at a temperature between 450 and 510 °C,

(c) Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

(d) Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

(e) Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

(f) Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

16. A method for obtaining a rolled product according to claim 1 comprising a sheet product, said method comprising:

(a) Casting a rolling ingot, followed by optional stress relieving, and scalping,

(b) Homogenizing at a temperature between 470 and 530 °C,

(c) Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

(d) Optionally cold rolling,

(e) Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

(f) Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

17. An alloy comprising a composition selected from the group consisting of: (in weight %)

Si	Fe	Cu	Mn	Mg	Ti	Zr	Sc
<0.06	0.06	4.12	0.40	1.37	0.022		
<0.06	0.06	3.81	0.008	1.41	0.022	0.109	
<0.06	0.07	3.81	0.008	1.36	0.024	0.107	0.028
<0.06	0.05	4.20	0.24	1.23	0.016	0.11	0.032
<0.06	0.06	4.14	0.51	1.24	0.019	0.11	0.032

18. A substantially manganese-free aluminum alloy rolled product comprising (in percent by weight): Cu 3.6 - 4.5%, Mg 1.0 - 1.6%, Zr 0.08 - 0.20%, Sc up to 0.06%, Fe up to 0.08%, Si up to 0.09%, Mn less than 0.05%,remainder aluminum and incident impurities.

19. An aluminum alloy rolled product according to claim 2, wherein Zr is present in an amount from 0.08 – 0.14%.

20. An aluminum alloy rolled product according to claim 2, wherein Cu is present in an amount from 0.10 – 0.14%.

21. An aluminum alloy rolled product according to claim 3, wherein Cu is present in an amount from 0.10 – 0.14%.

22. An aluminum alloy rolled product according to claim 2, having a recrystallized volume fraction of 5% maximum.

23. An aluminum alloy rolled product according to claim 3 having a recrystallized volume fraction of 5% maximum.

24. An aluminum alloy rolled product according to claim 4 having a recrystallized volume fraction of 5% maximum.

25. An aluminum alloy rolled product according to claim 2, wherein Mn is present in an amount of < 0.01%.

26. An aluminum alloy rolled product according to claim 3, wherein Mn is present in an amount of $< 0.01\%$.

27. An aluminum alloy rolled product according to claim 4, wherein Mn is present in an amount of $< 0.01\%$.

28. An aluminum alloy rolled product according to claim 5, wherein Mn is present in an amount of $< 0.01\%$.

29. An aluminum alloy rolled product according to claim 2, having one or more of the following combinations of properties :

    a. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 400 MPa, and an apparent fracture toughness $K_{app(T\text{-}L)}$ of more than 110 MPa$\sqrt{m}$, measured according to ASTM E 561 in the T-L orientation on a specimen with a width of W=127 mm;

    b. an ultimate tensile strength in the longitudinal direction ($UTS_{(L)}$) of more than 450 MPa, and an elongation at fracture in the longitudinal direction of more than 24 %;

    c. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 400 MPa, and a Kahn stress R_e of at least 180 MPa, and preferably at least 190 MPa.

30. An aluminum alloy rolled product according to claim 3, having one or more of the following combinations of properties :

    a. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 400 MPa, and an apparent fracture toughness $K_{app(T\text{-}L)}$ of more than 110 MPa$\sqrt{m}$, measured according to ASTM E 561 in the T-L orientation on a specimen with a width of W=127 mm;

b. an ultimate tensile strength in the longitudinal direction ($UTS_{(L)}$) of more than 450 MPa, and an elongation at fracture in the longitudinal direction of more than 24 %;

c. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 400 MPa, and a Kahn stress R_e of at least 180 MPa.

31. An aluminum alloy rolled product according to claim 3, having one or more of the following combinations of properties :

    a. tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 400 MPa, and an apparent fracture toughness $K_{app(T-L)}$ of more than 110 MPa√m, measured according to ASTM E 561 in the T-L orientation on a specimen with a width of W=127 mm;

    b. an ultimate tensile strength in the longitudinal direction ($UTS_{(L)}$) of more than 450 MPa, and an elongation at fracture in the longitudinal direction of more than 24 %;

    c. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 400 MPa, and a Kahn stress R_e of at least 180 MPa..

32. An aluminum alloy rolled product according to claim 2 comprising a plate having on or more of the following combinations of properties :

    a. a $UTS_{(L)}$ of more than 500 MPa, and a $K_{app(T-L)}$ of more than 75 MPa√m, measured according to ASTM E 647 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

    b. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 450 MPa, and a $K_{app(L-T)}$ of more than 77 MPa√m, measured according to ASTM E 561 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

    c. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 350 MPa, and a Kahn stress R_e of at least 190 MPa.

33. An aluminum alloy rolled product according to claim 3 comprising a plate having on or more of the following combinations of properties :

a. a $UTS_{(L)}$ of more than 500 MPa, and a $K_{app(T-L)}$ of more than 75 MPa$\sqrt{m}$, measured according to ASTM E 647 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

b. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 450 MPa, and a $K_{app(L-T)}$ of more than 77 MPa$\sqrt{m}$, measured according to ASTM E 561 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

c. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 350 MPa, and a Kahn stress R_e of at least 190 MPa.

34. An aluminum alloy rolled product according to claim 4 comprising a plate having on or more of the following combinations of properties :

a. a $UTS_{(L)}$ of more than 500 MPa, and a $K_{app(T-L)}$ of more than 75 MPa$\sqrt{m}$, measured according to ASTM E 647 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

b. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 450 MPa, and a $K_{app(L-T)}$ of more than 77 MPa$\sqrt{m}$, measured according to ASTM E 561 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

c. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 350 MPa, and a Kahn stress R_e of at least 190 MPa.

35. An aluminum alloy rolled product according to claim 5 comprising a plate having on or more of the following combinations of properties :

a. a $UTS_{(L)}$ of more than 500 MPa, and a $K_{app(T-L)}$ of more than 75 MPa$\sqrt{m}$, measured according to ASTM E 647 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

b. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 450 MPa, and a $K_{app(L-T)}$ of more than 77 MPa√m, measured according to ASTM E 561 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

c. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 350 MPa, and a Kahn stress R_e of at least 190 MPa.

36. An aluminum alloy rolled product according to claim 6 comprising a plate having on or more of the following combinations of properties :

a. a $UTS_{(L)}$ of more than 500 MPa, and a $K_{app(T-L)}$ of more than 75 MPa√m, measured according to ASTM E 647 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

b. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 450 MPa, and a $K_{app(L-T)}$ of more than 77 MPa√m, measured according to ASTM E 561 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

c. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 350 MPa, and a Kahn stress R_e of at least 190 MPa.

37. An aluminum alloy rolled product according to claim 7 comprising a plate having on or more of the following combinations of properties :

a. a $UTS_{(L)}$ of more than 500 MPa, and a $K_{app(T-L)}$ of more than 75 MPa√m, measured according to ASTM E 647 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

b. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 450 MPa, and a $K_{app(L-T)}$ of more than 77 MPa√m, measured according to ASTM E 561 on a 6.35 mm thick C(T) specimen with a width of W=40 mm;

c. a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 350 MPa, and a Kahn stress R_e of at least 190 MPa.

38. An aluminum alloy rolled product according to claim 2 comprising a sheet or thin plate with a thickness below about 12 mm in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 1.3 10^{-4} mm/cycles at $\Delta K = 10$ MPa$\sqrt{m}$,
- da/dn less than 4.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa$\sqrt{m}$,
- da/dn less than 8.0 10^{-4} mm/cycles at $\Delta K = 20$ MPa$\sqrt{m}$,
- da/dn less than 16 10^{-4} mm/cycles at $\Delta K = 25$ MPa$\sqrt{m}$,
- da/dn less than 25 10^{-4} mm/cycles at $\Delta K = 30$ MPa$\sqrt{m}$.

39. An aluminum alloy rolled product according to claim 3, comprising a sheet or thin plate with a thickness below about 12 mm in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 1.3 10^{-4} mm/cycles at $\Delta K = 10$ MPa$\sqrt{m}$,
- da/dn less than 4.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa$\sqrt{m}$,
- da/dn less than 8.0 10^{-4} mm/cycles at $\Delta K = 20$ MPa$\sqrt{m}$,
- da/dn less than 16 10^{-4} mm/cycles at $\Delta K = 25$ MPa$\sqrt{m}$,
- da/dn less than 25 10^{-4} mm/cycles at $\Delta K = 30$ MPa$\sqrt{m}$.

40. An aluminum alloy rolled product according to claim 4 comprising a sheet or thin plate with a thickness below about 12 mm in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 1.3 10^{-4} mm/cycles at $\Delta K = 10$ MPa$\sqrt{m}$,
- da/dn less than 4.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa$\sqrt{m}$,
- da/dn less than 8.0 10^{-4} mm/cycles at $\Delta K = 20$ MPa$\sqrt{m}$,

- da/dn less than 16 10^{-4} mm/cycles at $\Delta K = 25$ MPa√m,
- da/dn less than 25 10^{-4} mm/cycles at $\Delta K = 30$ MPa√m.

41. An aluminum alloy rolled product according to claim 5 comprising a sheet or thin plate with a thickness below about 12 mm in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

    - da/dn less than 1.3 10^{-4} mm/cycles at $\Delta K = 10$ MPa√m,
    - da/dn less than 4.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa√m,
    - da/dn less than 8.0 10^{-4} mm/cycles at $\Delta K = 20$ MPa√m,
    - da/dn less than 16 10^{-4} mm/cycles at $\Delta K = 25$ MPa√m,
    - da/dn less than 25 10^{-4} mm/cycles at $\Delta K = 30$ MPa√m.

42. An aluminum alloy rolled product according to claim 6 comprising a sheet or thin plate with a thickness below about 12 mm in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

    - da/dn less than 1.3 10^{-4} mm/cycles at $\Delta K = 10$ MPa√m,
    - da/dn less than 4.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa√m,
    - da/dn less than 8.0 10^{-4} mm/cycles at $\Delta K = 20$ MPa√m,
    - da/dn less than 16 10^{-4} mm/cycles at $\Delta K = 25$ MPa√m,
    - da/dn less than 25 10^{-4} mm/cycles at $\Delta K = 30$ MPa√m.

43. An aluminum alloy rolled product according to claim 7 comprising a sheet or thin plate with a thickness below about 12 mm in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

    - da/dn less than 1.3 10^{-4} mm/cycles at $\Delta K = 10$ MPa√m,

- da/dn less than 4.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa$\sqrt{m}$,
- da/dn less than 8.0 10^{-4} mm/cycles at $\Delta K = 20$ MPa$\sqrt{m}$,
- da/dn less than 16 10^{-4} mm/cycles at $\Delta K = 25$ MPa$\sqrt{m}$,
- da/dn less than 25 10^{-4} mm/cycles at $\Delta K = 30$ MPa$\sqrt{m}$.

44. An aluminum alloy rolled product according to claim 8 comprising a sheet or thin plate with a thickness below about 12 mm in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 1.3 10^{-4} mm/cycles at $\Delta K = 10$ MPa$\sqrt{m}$,
- da/dn less than 4.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa$\sqrt{m}$,
- da/dn less than 8.0 10^{-4} mm/cycles at $\Delta K = 20$ MPa$\sqrt{m}$,
- da/dn less than 16 10^{-4} mm/cycles at $\Delta K = 25$ MPa$\sqrt{m}$,
- da/dn less than 25 10^{-4} mm/cycles at $\Delta K = 30$ MPa$\sqrt{m}$.

45. An aluminum alloy rolled product according to claim 2 comprising a plate in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 3.0 10^{-5} mm/cycles at $\Delta K = 10$ MPa$\sqrt{m}$,
- da/dn less than 1.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa$\sqrt{m}$,
- da/dn less than 1.0 10^{-3} mm/cycles at $\Delta K = 25$ MPa$\sqrt{m}$,
- da/dn less than 3 10^{-3} mm/cycles at $\Delta K = 30$ MPa$\sqrt{m}$.

46. An aluminum alloy rolled product according to claim 3 comprising a plate in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 3.0 10^{-5} mm/cycles at $\Delta K = 10$ MPa$\sqrt{m}$,

- da/dn less than 1.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa√m,
- da/dn less than 1.0 10^{-3} mm/cycles at $\Delta K = 25$ MPa√m,
- da/dn less than 3 10^{-3} mm/cycles at $\Delta K = 30$ MPa√m.

47. An aluminum alloy rolled product according to claim 4 comprising a plate in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 3.0 10^{-5} mm/cycles at $\Delta K = 10$ MPa√m,
- da/dn less than 1.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa√m,
- da/dn less than 1.0 10^{-3} mm/cycles at $\Delta K = 25$ MPa√m,
- da/dn less than 3 10^{-3} mm/cycles at $\Delta K = 30$ MPa√m.

48. An aluminum alloy rolled product according to claim 5, comprising a plate in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 3.0 10^{-5} mm/cycles at $\Delta K = 10$ MPa√m,
- da/dn less than 1.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa√m,
- da/dn less than 1.0 10^{-3} mm/cycles at $\Delta K = 25$ MPa√m,
- da/dn less than 3 10^{-3} mm/cycles at $\Delta K = 30$ MPa√m.

49. An aluminum alloy rolled product according to claim 6 comprising a plate in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 3.0 10^{-5} mm/cycles at $\Delta K = 10$ MPa√m,
- da/dn less than 1.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa√m,
- da/dn less than 1.0 10^{-3} mm/cycles at $\Delta K = 25$ MPa√m,
- da/dn less than 3 10^{-3} mm/cycles at $\Delta K = 30$ MPa√m.

50. An aluminum alloy rolled product according to claim 7 comprising a plate in T351 temper, having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 3.0 10^{-5} mm/cycles at $\Delta K = 10$ MPa$\sqrt{m}$,
- da/dn less than 1.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa$\sqrt{m}$,
- da/dn less than 1.0 10^{-3} mm/cycles at $\Delta K = 25$ MPa$\sqrt{m}$,
- da/dn less than 3 10^{-3} mm/cycles at $\Delta K = 30$ MPa$\sqrt{m}$.

51. An aluminum alloy rolled product according to claim 8 comprising a plate in T351 temper having a da/dn in T-L direction which fulfils at least one of the following conditions :

- da/dn less than 3.0 10^{-5} mm/cycles at $\Delta K = 10$ MPa$\sqrt{m}$,
- da/dn less than 1.0 10^{-4} mm/cycles at $\Delta K = 15$ MPa$\sqrt{m}$,
- da/dn less than 1.0 10^{-3} mm/cycles at $\Delta K = 25$ MPa$\sqrt{m}$,
- da/dn less than 3 10^{-3} mm/cycles at $\Delta K = 30$ MPa$\sqrt{m}$.

52. An aluminum alloy rolled product according to claim 2, exhibiting in a corrosion test according to ASTM G 110, a maximum intergranular attack of less than 80 µm in T39 temper, and/or less than 200 µm in T851 temper, and/or less than 250 µm in T89 temper, and/or less than 300 µm in T351 temper.

53. An aluminum alloy rolled product according to claim 3, exhibiting in a corrosion test according to ASTM G 110, a maximum intergranular attack of less than 80 µm in T39 temper, and/or less than 200 µm in T851 temper, and/or less than 250 µm in T89 temper, and/or less than 300 µm in T351 temper.

54. An aluminum alloy rolled product according to claim 4, exhibiting in a corrosion test according to ASTM G 110, a maximum intergranular attack of less than 80 µm in T39 temper, and/or less than 200 µm in T851 temper, and/or less than 250 µm in T89 temper, and/or less than 300 µm in T351 temper.

55. An aluminum alloy rolled product according to claim 5, exhibiting in a corrosion test according to ASTM G 110, a maximum intergranular attack of less than 80 μm in T39 temper, and/or less than 200 μm in T851 temper, and/or less than 250 μm in T89 temper, and/or less than 300 μm in T351 temper.

56. An aluminum alloy rolled product according to claim 6, exhibiting in a corrosion test according to ASTM G 110, a maximum intergranular attack of less than 80 μm in T39 temper, and/or less than 200 μm in T851 temper, and/or less than 250 μm in T89 temper, and/or less than 300 μm in T351 temper.

57. An aluminum alloy rolled product according to claim 7, exhibiting in a corrosion test according to ASTM G 110, a maximum intergranular attack of less than 80 μm in T39 temper, and/or less than 200 μm in T851 temper, and/or less than 250 μm in T89 temper, and/or less than 300 μm in T351 temper.

58. An aluminum alloy rolled product according to claim 8, exhibiting in a corrosion test according to ASTM G 110, a maximum intergranular attack of less than 80 μm in T39 temper, and/or less than 200 μm in T851 temper, and/or less than 250 μm in T89 temper, and/or less than 300 μm in T351 temper.

59. An aluminum alloy rolled product according to claim 9, exhibiting in a corrosion test according to ASTM G 110, a maximum intergranular attack of less than 80 μm in T39 temper, and/or less than 200 μm in T851 temper, and/or less than 250 μm in T89 temper, and/or less than 300 μm in T351 temper.

60. An aluminum alloy rolled product according to claim 10, exhibiting in a corrosion test according to ASTM G 110, a maximum intergranular attack of less than 80 μm in T39 temper, and/or less than 200 μm in T851 temper, and/or less than 250 μm in T89 temper, and/or less than 300 μm in T351 temper.

61. An aluminum alloy rolled product according to claim 2, exhibiting in a corrosion test according to ASTM G 110 a maximum intergranular attack of less than 70 μm in T39 temper,

and/or less than 180 µm in T851 temper, and/or less than 220 µm in T89 temper, and/or less than 270 µm in T351 temper.

62. An aluminum alloy rolled product according to claim 3, exhibiting in a corrosion test according to ASTM G 110 a maximum intergranular attack of less than 70 µm in T39 temper, and/or less than 180 µm in T851 temper, and/or less than 220 µm in T89 temper, and/or less than 270 µm in T351 temper.

63. An aluminum alloy rolled product according to claim 4, exhibiting in a corrosion test according to ASTM G 110 a maximum intergranular attack of less than 70 µm in T39 temper, and/or less than 180 µm in T851 temper, and/or less than 220 µm in T89 temper, and/or less than 270 µm in T351 temper.

64. An aluminum alloy rolled product according to claim 5, exhibiting in a corrosion test according to ASTM G 110 a maximum intergranular attack of less than 70 µm in T39 temper, and/or less than 180 µm in T851 temper, and/or less than 220 µm in T89 temper, and/or less than 270 µm in T351 temper.

65. An aluminum alloy rolled product according to claim 6, exhibiting in a corrosion test according to ASTM G 110 a maximum intergranular attack of less than 70 µm in T39 temper, and/or less than 180 µm in T851 temper, and/or less than 220 µm in T89 temper, and/or less than 270 µm in T351 temper.

66. An aluminum alloy rolled product according to claim 7, exhibiting in a corrosion test according to ASTM G 110 a maximum intergranular attack of less than 70 µm in T39 temper, and/or less than 180 µm in T851 temper, and/or less than 220 µm in T89 temper, and/or less than 270 µm in T351 temper.

67. An aluminum alloy rolled product according to claim 8, exhibiting in a corrosion test according to ASTM G 110 a maximum intergranular attack of less than 70 µm in T39 temper, and/or less than 180 µm in T851 temper, and/or less than 220 µm in T89 temper, and/or less than 270 µm in T351 temper.

68. An aluminum alloy rolled product according to claim 9, exhibiting in a corrosion test according to ASTM G 110 a maximum intergranular attack of less than 70 µm in T39 temper, and/or less than 180 µm in T851 temper, and/or less than 220 µm in T89 temper, and/or less than 270 µm in T351 temper.

69. An aluminum alloy rolled product according to claim 10, exhibiting in a corrosion test according to ASTM G 110 a maximum intergranular attack of less than 70 µm in T39 temper, and/or less than 180 µm in T851 temper, and/or less than 220 µm in T89 temper, and/or less than 270 µm in T351 temper.

70. An aluminum alloy rolled product according to claim 11, exhibiting in a corrosion test according to ASTM G 110 a maximum intergranular attack of less than 70 µm in T39 temper, and/or less than 180 µm in T851 temper, and/or less than 220 µm in T89 temper, and/or less than 270 µm in T351 temper.

71. A lower wing skin structural member made in an aluminum alloy rolled plate product according to claim 2.

72. A lower wing skin structural member made in an aluminum alloy rolled plate product according to claim 3.

73. A lower wing skin structural member made in an aluminum alloy rolled plate product according to claim 4.

74. A lower wing skin structural member made in an aluminum alloy rolled plate product according to claim 5.

75. A lower wing skin structural member made in an aluminum alloy rolled plate product according to claim 6.

76. A lower wing skin structural member made in an aluminum alloy rolled plate product according to claim 7.

77. A lower wing skin structural member made in an aluminum alloy rolled plate product according to claim 8.

78. A lower wing skin structural member made in an aluminum alloy rolled plate product according to claim 9.

79. A lower wing skin structural member made in an aluminum alloy rolled plate product according to claim 10.

80. A lower wing skin structural member made in an aluminum alloy rolled plate product according to claim 11.

81. A lower wing skin structural member made in an aluminum alloy rolled plate product according to claim 12.

82. A fuselage skin member made in an aluminum alloy rolled plate or sheet product according to claim 2.

83. A fuselage skin member made in an aluminum alloy rolled plate or sheet product according to claim 3.

84. A fuselage skin member made in an aluminum alloy rolled plate or sheet product according to claim 4.

85. A fuselage skin member made in an aluminum alloy rolled plate or sheet product according to claim 5.

86. A fuselage skin member made in an aluminum alloy rolled plate or sheet product according to claim 6.

87. A fuselage skin member made in an aluminum alloy rolled plate or sheet product according to claim 7.

88. A fuselage skin member made in an aluminum alloy rolled plate or sheet product according to claim 8.

89. A fuselage skin member made in an aluminum alloy rolled plate or sheet product according to claim 9.

90. A fuselage skin member made in an aluminum alloy rolled plate or sheet product according to claim 10.

91. A fuselage skin member made in an aluminum alloy rolled plate or sheet product according to claim 11.

92. A fuselage skin member made in an aluminum alloy rolled plate or sheet product according to claim 12.

93. A method for obtaining an aluminum alloy rolled product according to claim 2, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving ,and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

94. A method for obtaining an aluminum alloy rolled product according to claim 3, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving ,and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

95. A method for obtaining an aluminum alloy rolled product according to claim 4, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving ,and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

96. A method for obtaining an aluminum alloy rolled product according to claim 5, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving ,and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

97. A method for obtaining an aluminum alloy rolled product according to claim 6, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving ,and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

98. A method for obtaining an aluminum alloy rolled product according to claim 7, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving ,and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

99. A method for obtaining an aluminum alloy rolled product according to claim 8, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving ,and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

100. A method for obtaining an aluminum alloy rolled product according to claim 9, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving ,and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

101. A method for obtaining an aluminum alloy rolled product according to claim 10, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving ,and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

102. A method for obtaining an aluminum alloy rolled product according to claim11, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

103. A method for obtaining an aluminum alloy rolled product according to claim 12, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

104. A method for obtaining an aluminum alloy rolled product according to claim13, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

105. A method for obtaining an aluminum alloy rolled product according to claim 14, wherein said rolled product comprises a plate, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 450 and 510 °C,

Hot-rolling on a reversing mill, preferably with an exit temperature between 350 and 390 °C,

Optionally, for plate with a thickness of less than about 30 mm, conducting at least one intermediate reheating to about 480 °C, followed by one or more hot-rolling passes, the final exit temperature optionally being between 350 and 370 °C,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching and natural aging,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

106. An aluminum alloy wherein when employed as plate or sheet, presents a compromise between fracture toughness and mechanical strength in that it is suitable for use in lower wingskin as well as fuselage products,

wherein when used as a sheet or thin plate fulfilling at least one of the following conditions (i) a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 400 MPa, and an apparent fracture toughness $K_{app(T-L)}$ of more than 110 MPa$\sqrt{m}$, measured according to ASTM E 561 in the T-L orientation on a specimen with a width of W=127 mm; (ii) an ultimate tensile strength in the longitudinal direction ($UTS_{(L)}$) of more than 450 MPa, and an elongation at fracture in the longitudinal direction of more than 24 %; and/or (iii) a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 400 MPa, and a Kahn stress R_e of at least 180 MPa,,

and further wherein, when employed as thick plate having at least one the following combinations of properties : (i) a $UTS_{(L)}$ of more than 500 MPa, and a $K_{app(L-T)}$ of more than 75 MPa$\sqrt{m}$, measured according to ASTM E 561 on a 6.35 mm thick C(T) specimen with a width of W=40 mm; (ii) a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 450 MPa and a $K_{app(L-T)}$ of more than 77 MPa$\sqrt{m}$, measured according to ASTM E 561 on a 6.35 mm thick C(T) specimen with a width of W=40 mm; and/or (iii) a tensile yield strength in the longitudinal direction ($TYS_{(L)}$) of more than 350 MPa and a Kahn stress R_e of at least 190 MPa.

107. A method for obtaining a rolled product according to claim 2 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

108. A method for obtaining a rolled product according to claim 3 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

109. A method for obtaining a rolled product according to claim 4 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

110. A method for obtaining a rolled product according to claim 5 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

111. A method for obtaining a rolled product according to claim 6 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

112. A method for obtaining a rolled product according to claim 7 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

113. A method for obtaining a rolled product according to claim 8 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

114. A method for obtaining a rolled product according to claim 9 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

115. A method for obtaining a rolled product according to claim 10 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

116. A method for obtaining a rolled product according to claim 11 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

117. A method for obtaining a rolled product according to claim 12 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

118. A method for obtaining a rolled product according to claim 13 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.

119. A method for obtaining a rolled product according to claim 14 comprising a sheet product, said method comprising:

Casting a rolling ingot, followed by optional stress relieving, and scalping,

Homogenizing at a temperature between 470 and 530 °C,

Hot-rolling down to a thickness of less than 12 mm, and not more than 200 % of final thickness, with a final exit temperature between 230 and 350 °C,

Optionally cold rolling,

Solution heat treating at a temperature between 490 and 510 °C, followed by water quenching,

Cold working by stretching alone or cold rolling followed by stretching, optionally followed by artificial aging.